REMARKS

Claims 1-11, 24-29, 33-38, and 40-45 are pending in the present application.

Claims 12-23, 30-32, 39, and 46-60 have been cancelled without prejudice or disclaimer to the subject matter contained therein. The Applicants reserve the right to file divisional applications directed to this cancelled subject matter.

Claims 1-11, 24, 25, 33-38, and 40-45 have been withdrawn from consideration as being drawn to a non-elected species. The Applicants respectfully submit that Claims 1-11, 24, 25, 33-38, and 40-45 should be entitled to consideration because, for the reasons set forth below, generic claim 26 is allowable over the prior art of record and each of these claims to the alleged additional species are written in dependent form and/or include all the limitations of allowable generic claim 26.

I. ARGUMENTS

A. Rejection under 35 U.S.C. §102(e)

Claims 26-28 have been rejected under 35 U.S.C. §102(e) as being anticipated by Yoshihara et al. (US-A-6,245,593). This rejection under 35 U.S.C. §102(e) is respectfully traversed.

The presently claimed invention, as set forth in amended independent claim 26, is directed to a method for protecting a MEMS wafer during a dicing. The claimed method mounts, upon a backside of the MEMS wafer, a layer of dicing tape, the MEMS wafer having a plurality of MEMS structure sites on a front side and a plurality of through holes, each through hole corresponding to a MEMS structure site, the through holes being formed such that each through hole penetrates through the wafer from the backside of the wafer to the front side; mounts, upon the front side of the MEMS wafer, prior to dicing, a wafer cap to produce a laminated MEMS wafer, the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer; dices the MEMS wafer into a plurality of dies such that each die includes a MEMS structure site and a corresponding through hole; and mounts, upon the dicing tape, a layer of transfer tape.

The Examiner, in formulating the present rejection under 35 U.S.C. §102(e), alleges that Yoshihara et al. anticipates the presently claimed invention. More specifically, the Examiner alleges that Yoshihara et al. teaches mounting, upon a backside of a wafer (1), a layer of dicing tape (2), the wafer having a front patterned side and a plurality of through holes on a backside, the through holes providing a possible leak path from a backside of the wafer to the front patterned side of the wafer; dicing the wafer into a plurality of dies; and mounting, upon the diced layer of dicing tape, a layer of transfer tape. The Applicants respectfully traverse these allegations.

As set forth above, amended independent claim 26 sets forth that upon a backside of the MEMS wafer, a layer of dicing tape is mounted wherein the MEMS wafer has a plurality of MEMS structure sites on a front side and a plurality of corresponding through holes, each through hole corresponding to a MEMS structure site. Amended independent claim 26 further states that, upon the front side of the MEMS wafer, prior to dicing, a wafer cap is mounted to produce a laminated MEMS wafer, the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer. Moreover, amended independent claim 26 sets forth that the MEMS wafer is diced into a plurality of dies such that each die includes a MEMS structure site and a corresponding through hole. Lastly, amended independent claim 26 sets forth that a layer of transfer tape is mounted upon the dicing tape.

In contrast, Yoshihara et al. teaches a dicing method wherein a wafer has formed thereon a wafer sheet having an adhesive layer on each side. Moreover, Yoshihara et al. teaches that the adhesive layer (2b) mount on the front side of the wafer includes no recessed portions associated with the MEMS sites. More specifically, Yoshihara et al. teaches, at column 4, lines 1-12, that the adhesive layer (2b) includes hardened regions (6) wherein these hardened regions are associated over each site of the wafer. Yoshihara et al. shows that these hardened regions engaged the sites and are not recessed. Thus, Yoshihara et al. fails to teach or suggest mounting, upon the front side of the MEMS wafer, prior to dicing, a wafer cap to produce a laminated MEMS wafer, the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer, as set forth in amended independent claim 26.

Therefore, contrary to the Examiner's conclusion, Yoshihara et al. fails to anticipate the presently claimed invention, as set forth by amended independent claim 26.

With respect to dependent claims 27 and 28, the Applicants, for the sake of brevity, will not address the reasons supporting patentability for this individual dependent claim, as these claims depend directly from the allowable independent claim 26 for the reasons set forth above. The Applicants reserve the right to address the patentability of these dependent claims at a later time, should it be necessary.

Accordingly, in view of the amendments and reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the present rejection under 35 U.S.C. §102(e).

B. Rejection under 35 U.S.C. §103

Claims 29 has been rejected under 35 U.S.C. §103 as being unpatentable over Yoshihara et al. (US-A-6,245,593) in view of Ohkawa et al. (US-A-5,360,873). This rejection under 35 U.S.C. §103 is respectfully traversed.

With respect to dependent claim 29, the Applicants, for the sake of brevity, will not address the reasons supporting patentability for this individual dependent claim, as this claim depends directly from the allowable independent claim 26 for the reasons set forth above. The Applicants reserve the right to address the patentability of this dependent claim at a later time, should it be necessary.

Accordingly, in view of the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the present rejection under 35 U.S.C. §103.

C. Provisional Rejection under Obviousness-type Double-patenting

Claims 26-29 have been provisionally rejected under the doctrine of obviousness-type double-patenting over claims 115 and 117 of co-pending patent application number 10/006,966 in view of Yoshihara et al. (US-A-6,245,593). This rejection under the doctrine of obviousness-type double-patenting is respectfully traversed.

Amended Independent claim 115 of co-pending patent application number 10/006,966 recites a method for protecting a MEMS wafer during a dicing which: mounts, upon a backside of the MEMS wafer, a layer of dicing tape, the MEMS wafer having a plurality of MEMS structure sites on a front side and a plurality of through holes, each through hole corresponding

to a MEMS structure site, the through holes being formed such that each through hole penetrates through the wafer from the backside of the wafer to the front side; and dices the MEMS wafer into a plurality of dies such that each die includes a MEMS structure site and a corresponding through hole.

Moreover, Dependent claim 117 of co-pending patent application number 10/006,966 recites a method for protecting a MEMS wafer during a dicing which: mounts, upon a backside of the MEMS wafer, a layer of dicing tape, the MEMS wafer having a plurality of MEMS structure sites on a front side and a plurality of through holes, each through hole corresponding to a MEMS structure site, the through holes being formed such that each through hole penetrates through the wafer from the backside of the wafer to the front side; and dices the MEMS wafer into a plurality of dies such that each die includes a MEMS structure site and a corresponding through hole wherein the layer of dicing tape has a UV releasable adhesive.

In contrast, the presently claimed invention sets forth the mounting, upon the front side of the MEMS wafer, prior to dicing, of a wafer cap to produce a laminated MEMS wafer, the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer, as set forth in amended independent claim 26. Thus, claims 115 and 117 of co-pending patent application number 10/006,966 fails to teach or suggest mounting, upon the front side of the MEMS wafer, prior to dicing, a wafer cap to produce a laminated MEMS wafer, the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer, as set forth in amended independent claim 26.

Furthermore, as respectfully submitted above, Yoshihara et al. fails to teach or suggest mounting, upon the front side of the MEMS wafer, prior to dicing, a wafer cap to produce a laminated MEMS wafer, the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer, as set forth in amended independent claim 26.

Therefore, the proposed combination of claims 115 and 117 of co-pending patent application number 10/006,966 in view of Yoshihara et al., fails to teach, disclose, suggest, or render obvious, the presently claimed invention, as set forth in amended independent claim 26.

Accordingly, in view of the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the present provisional rejection under the doctrine of obviousness-type double-patenting.

II. CONCLUSION

Accordingly, in view of all the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the present rejections. Also, an early indication of allowability is earnestly solicited.

Respectfully submitted,

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